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TECHNOLOGY-ENHANCED LANGUAGE TEACHING :

CURRENT RESEARCH AND BEST PRACTICES

Soegijapranata Catholic University

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Technology-Enhanced Language Teaching: Current Research and Best Practices

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FOREWORD

Existent literature on the role of digital technologies has suggested that technologies have transformed teaching strategies, teaching material deliveries, classroom interactions, and student engagement. Changing student demography and characteristics has partly influenced the extent to which digital technology is used in today's classrooms.

Indonesian government has anticipated this changing paradigm in higher education by setting up SPADA (*Sistem Pembelajaran Daring Indonesia*), a nationally-owned online learning platform. The government has also enforced some policies regarding online learning and the use of technologies for classrooms in higher education institutions. The Ministry of Research, Technology, and Higher Education even provides incentives and grants for innovative adoption of technology in the classrooms for departments in Indonesian higher education. Nowadays, it is increasingly more common to see teachers use blended learning, massive open online courses (MOOCs), and real-time online student evaluation. We have seen evidence where teaching and learning have extended beyond classroom walls. These approaches, while seemingly attractive, have their own downsides and advantages.

This book is written to provide insights for readers who are interested in the use of digital technologies in classrooms, particularly, language classrooms. Ten articles on technology and language research and best practices are compiled in this book to inform readers the current research and best practices on technology-enhanced language teaching and learning. This book is divided into four parts. The first part will discuss how social media is used to enhance the teaching and learning process. The second part focuses on Mobile Learning, particularly, how students perceive mobile learning and how

smartphones can benefit students. The articles in the third part discuss the possibilities of using Google applications in language classrooms. The last part of the book contains articles on the evaluation of e-learning.

This book is written as a part of the research grant awarded to by the Ministry of Research, Technology, and Higher Education. This book will be used as reference for students in the Faculty of Language and Arts, especially those in courses related to the use of digital technologies. This book will hopefully can contribute to the professional development of teachers and students in language classrooms.

Editors

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A STUDY OF STUDENTS' ATTITUDES AND SELF-EFFICACY TOWARDS THE USE OF MOBILE TECHNOLOGY FOR LANGUAGE LEARNING

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Introduction

People of the 21st century are living in a digital world. Mobile technology plays a key role in this digital world. Mobile phone users in the world reach over four billion users; on the other hand, computer owners are mere approximately 800 million people (Cochrane & Bateman, 2010). This fact is not surprising due to mobile phone handy characteristics that make human's life easier by connecting two or more people in different places. The rapid development of mobile technology such as a smartphone allows people not only to communicate with each other but also in many cases serve as a tool for people's social and work life, and perhaps, an influential tool for academic life (Vazquez-Cano, 2014). A smartphone is best used for learning since it is much more mobile compared to a laptop. Smartphone mobility makes it indispensable in a certain situation yet an obligation for others (Franklin, 2011).

Most students are familiar with mobile technology. In schools, mobile technology plays a crucial part in college students' scholarly lives (Vazquez-Cano, 2014). Students wish they can have various handy learning tools which enable them to learn anywhere they wish to (Kim, Rueckert, Kim, & Seo, 2013). The utilization of mobile devices for educational purposes referred to as mobile learning or m-learning. The focus of m-learning is facilitating and broadening teaching and learning sources, such as information collection and exchange, learning construction, and collaborative learning (Hine, Rentoul, & Specht, 2004 as cited in Yang, 2012).

The existence of mobile learning (m-learning) in the field of education is becoming more important. Currently, 90% of college students own a mobile phone and believe that the device is their most important communication tool as it connects them with other learners and information in modern ways (Franklin, 2011). M-learning is capable of providing numerous information and supporting ubiquitous as well as collaborative learning for students (Yang, 2012). Chang, Yan, & Tseng (2012) also stated that ubiquitous learning will be a trend in the coming years because students could learn anywhere and anytime without limited place and time.

Many scholars have conducted numerous studies on the impacts of mobile learning. A study conducted by Gikas & Grant (2013) stated that location cannot restrict the process of learning because potential learning could happen in spite of place. M-learning gives an opportunity for students to do independent learning, especially outside the classroom when their teachers are not around. This affirms that the students act as the main role, whereas the teachers become guides (Niño, 2015). Technology plays a fundamental role in the instruction of either second or foreign language that has become one of the main courses in the educational field over the past three decades (Oz, 2015).

Mobile technology gives new learning experiences and opportunities for language learning. Students of English as a foreign language ought to learn and practice the language continuously in order to improve their skills. Nonetheless, teaching and learning process in the classroom has a place and time restriction, thus it is necessary to develop devices which do not have a place and time restriction for learning English such as mobile devices (Chang, Yan, & Tseng, 2012). Eight areas and skills of language are grammar, vocabulary, reading, writing, pronunciation, listening, speaking, and culture (Levy, 2009). Today, mobile phones are highly used for learning vocabulary (Wang & Smith, 2013) since mobile device could be an effective tool to improve vocabulary. For example, Suratno, Murniati, & Aydawati (2016) reported that students' vocabularies in their study were improving since they used mobile device.

Furthermore, Wang & Smith (2013) also added that a mobile phone can be an effective tool to improve students' reading and grammar skill. It can be concluded that m-learning can be an efficient instrument for assisting English learning performance and motivation (Chang, Yan, & Tseng, 2012).

M-learning can be a helpful instrument for students to succeed in learning. In addition, it gives a feeling of personal control over a learning task that affects the success of academic achievement or self-efficacy (Hsieh & Kang, 2010). Self-efficacy is defined as someone's personal judgment of his/her capabilities to manage and perform particular activities to achieve goals that have been set (Bandura, 1997). Self-efficacy beliefs affect people on goals they set, an effort that they will mobilize, and their tenacity in facing an obstacle or an unpleasant process (Zimmerman, Bandura, & Martinez-Pons, 1992). A positive correlation has been consistently discovered between self-efficacy and academic achievement (Hsieh & Kang, 2010). The main concern of previous studies on self-efficacy beliefs is mostly about students' assessment of their capability (Cubukcu, 2008). A great number of previous research findings indicate that self-efficacy takes part in predicting and mediating students' achievements, motivation, and learning (Dinther, Dochy, & Segers, 2011).

This study was conducted to discuss mobile technology development in academic life. The study aimed to discover and analyze students' attitudes and self-efficacy towards the use of mobile technology in language learning processes, the correlation between self-efficacy and gender, and the correlation between self-efficacy and level of technology comfort. The writer analyzed the use of m-learning specifically on learning English as a foreign language.

Literature Review

Mobile Technology in Education

Mobile technology is not considered new in academic life, in which students implement mobile technology to complete certain

tasks. The implementation of mobile technology gives advantages and disadvantages to learning processes. In addition, mobile technology can be implemented for any learning purposes such as language learning.

a. Mobile Technology Advantages and Disadvantages

Mobile technology can be accessed through mobile devices such as cell phone, e-book, netbook, laptop, pocket electronic dictionary, MP3 player, iPod, iPad, tablet, and latest mobile device trend, smartphone and other devices that characteristically lightweight, portable, and connect to the internet (Franklin, 2011; Niño, 2015). Previous studies on m-learning showed that m-learning has several advantages (Gikas & Grant, 2013; Al-Emran, Elsherif, & Shaalan, 2016; Cochrane & Bateman, 2010; Niño, 2015). They are as follows:

1. mobile technology connectivity allows students to access numerous information immediately without time or place settings;
2. mobile technology supports communicative as well as collaborative learning between students, their peers, and teachers outside the classroom;
3. mobile technology offers innovative learning experiences and practices;
4. mobile technology provides authentic resources for students.

Gikas & Grant (2013) mentioned not only the advantages but also the disadvantages that students suffered from mobile technology, as follows:

1. students were frustrated with teachers who were reluctant to utilize mobile technology in teaching and learning process;
2. students were frustrated with the small keyboard of a mobile phone that causes difficulty in typing long sentences;
3. social media applications in mobile devices that do not give any contribution to teaching and learning process may distract students' focus.

b. Mobile Technology for Language Learning
   Language students can take the benefits from mobile technology for learning. Niño (2015) explained that students who were learning a language mostly used mobile technology for:
   1. searching for words, phrases, and idiomatic expressions. Translating words/phrases into their first languages first (for comprehension purposes), then into the second language (for production purposes).
   2. listening how to pronounce certain words.
   3. searching the meaning of certain words from the target language, improving, correcting, and practicing vocabulary.

Students' Attitudes towards Mobile Technology

Students mostly give positive attitudes toward m-learning. Wang & Smith conducted a study on reading and grammar learning through a mobile phone. They found that forty-one out of fifty-six participants chose a mobile phone over other devices to receive learning materials. The other 14 participants preferred PC's email addresses and only one participant chose iPad. The next data in their study are consistent with their data mentioned before. It showed that two hundred and seventy-nine out of 372 subscribers registered their email for the project given with their mobile phone, even though they knew that they were permitted to use PC email addresses. Students mostly thought that a mobile phone was a useful device for reading short essays to improve their reading ability (Wang & Smith, 2013).
Students' reactions toward mobile technology for learning are not always positive. Similar to Gikas & Grant (2013) findings, Kim, Rueckert, Kim, & Seo (2013) reported students' frustration when using technology in learning activities. A student in their study revealed that several students were not able to access all new technologies. It is necessary to keep in mind that students might face an obstacle in accessing learning courses for independent learning outside the classroom using mobile technology considering the device and service cost. The most lovable mobile devices among students were laptop followed by netbooks, Apple iPhone, Android phones, and tablet in the last place. Most students preferred a laptop over a cell phone for implementing mobile learning activities owing to cell

phone small screen and keyboard. This finding from Kim, Rueckert, Kim, & Seo (2013) is similar to Gikas & Grant (2013) where students found it uncomfortable to perform mobile learning activities using a small screen and keyboard.

Self-efficacy

Self-efficacy refers to ones' ability to control their choices of activities, feelings about doing certain activities, how they think and motivate themselves, and the amount of effort they produce on such activities (Bandura, 1982; Bandura, 1993; McAuley & Blissmer, 2000). Judgment of self-efficacy should be expressed in terms of can do rather than will do. "Can is a judgment of capability; will is a statement of intention" (Bandura, 2006). Perceptions of efficacy are about someone's certainty on doing or solving particular activities, not how well they expect to do those activities (Zimmerman, 2000).
Bandura (1997) explained that there are four main determinants that raise students' self-efficacy, as follows:

1. mastery experiences: students give an interpretation of the outcome of their activities and use it to develop beliefs about their capability to do the further activities;
2. vicarious experiences: students seeing a fellow classmate's who is similar to them to observe his/her failure and success, thus students can get the information about their capability;
3. social persuasion: students get information that persuades and asserts them about their capability to implement an activity;
4. psychological arousal: students may feel anxious, wrought-up, and depressed that can be concluded as a signal of failure and weakness, whereas positive mood states can strengthen students' self-efficacy, on the contrary miserable mood states weaken it.

Self-efficacy towards Technology in Academic Field

Previous studies have indicated that self-efficacy influenced technology-based performance achievement. The higher levels of computer anxiety will be the lower levels of self-efficacy, as a result it reduced computer-based performance achievement (McInerney, McInerney, & Sinclair, 1994 cited in Saadse & Kira, 2009). A study has also demonstrated that students with a high level of internet self-

efficacy could execute internet-based learning assignments better than students who had lower level self-efficacy (Tsai & Tsai, 2003 cited in Peng, Tsai, & Wu, 2006). Similarly, Yang (2012) in his findings showed that students with high level of self-efficacy towards m-learning faced no problem in operating the functionalities in the mobile devices such as downloading online material, reading as well as accessing information. It can be concluded that students with a high level of self-efficacy have better technology-based performance that can lead to better achievement. Another study pointed out that university students with sufficient self-efficacy toward internet tended to view the internet as a functional tool-a functional technology (Peng, Tsai, & Wu, 2006).

Students' Level of Technology Comfort

Today students mostly express a high level of technology comfort. Matherly, Watson, & Ivancevich (2009) in their studies showed that students' level of technology comfort in two different universities was almost the same which was around 7.0 out of 10. Similar to Matherly, Watson, & Ivancevich (2009), Bishop (2010) conducted a research and designed a questionnaire to find out students' level of technology comfort. There were 34 students son the pre-test and 25 students on the post-test, surprisingly the findings indicated that both tests result were nearly the same and considered high which were 7.91 and 7.96 ranging from 1 to 10 (Bishop, 2010). Furthermore, Stolte, Richard, Rahman, & Kidd (2011) in their study also reported the students to have a high level of technology comfort wherein almost 90% of students were comfortable with technology for learning purposes.

Methodology

This study used quantitative methods to collect and analyze the data. Matveev (2002) and Curry, Nembhard, & Bradley (2009) mentioned that quantitative methods allow the researcher to state the research problem in a specific, definable, and set terms, to follow the original set of research goals, to statistically test hypotheses, to specify the independent and dependent variables clearly and precisely, to produce numeric data through standardized processes and instruments with predetermined response categories, to attain high levels of reliability of collected data due to mass surveying, and to reach more objective conclusion by minimizing subjectivity of judgment.

The writer used a quantitative method to answer the research questions. An instrument to collect the quantitative data was a close-ended questionnaire. For the first and second research questions, the writer analyzed the data using descriptive statistics to describe and present the means and the standard deviation (Cohen, Manion, & Morrison, 2007). However, to address the third research questions, she used inferential statistics to make conclusions and predictions based on the collected data (Cohen, Manion, & Morrison, 2007). To examine the correlation between self-efficacy and level of technology comfort she used Pearson Correlation. The independent variables were level of technology comfort. The dependent variables would be students' attitudes and self-efficacy.

Data Collection

a. Population and Sample

The participants in this study were the students of Faculty of Language and Arts, Soegijapranata Catholic University. There were 150 active students ranging from sophomores, junior, and senior who participated in this study. Ninety-seven samples are considered as the minimum number to collect quantitative data for 150 populations (Cohen, Manion, & Morrison, 2007). The greater quantity of samples will bring out a better accuracy (Youssef &

Agrawala, 2004); therefore, the questionnaire was distributed to 150 students.

b. Instruments

The writer used a close-ended questionnaire to collect the data. Close-ended questions mean that the respondent has to choose the answer from the choices provided (Krosnick & Presser, 2018). In addition, the writer used Likert Scale in the close-ended questions. Likert Scale usually contains 5-point scale ranging from Strongly Agree, Agree, Neither, Disagree, Strongly Disagree (Bertram, 2007). Below was the scoring system in the questionnaire:

Strongly Disagree = 1
Disagree = 2
Neither = 3
Agree = 4
Strongly Agree = 5

The questionnaire contained 10 statements regarding attitude and 10 questions regarding self-efficacy. The questionnaire was a modification of Yang's study. It comprised three background questions (name, gender, and technology comfort level).

Research Procedures

There were several procedures to collect the data in this study. First, the writer adopted and modified a questionnaire from the previous study on attitude and self-efficacy towards mobile technology (Yang, 2012). Second, the writer did a pilot study to pre-test or try out of a certain research instrument such as a questionnaire. Pilot study helps the researcher to check the validity and reliability of the questionnaire to minimize the possibility of research failure (Teijlingen & Hundley, 2001). The writer did the pilot study by distributing a questionnaire to fifteen random students of Faculty of Language and Arts who were out of sample. The questionnaire would be considered valid if the r value is more than 0.514 and reliable if the Cronbach's Alpha value is more than 0.60.

Table 1. The Validity Table of the Result of Students' Attitudes

Statements	Rvalue	Rtable	Interpretation
A mobile device can help me attain more ideas.	0.754	0.514	VALID
A mobile device is helpful for me to improve my language skills.	0.748	0.514	VALID
A mobile device can enhance my motivation to learn a language.	0.731	0.514	VALID
A mobile device allows me to express myself in a foreign language.	0.880	0.514	VALID
A mobile device makes learning language easier.	0.456	0.514	INVALID
A mobile device makes me an independent language learner.	0.585	0.514	VALID
A mobile device allows me to access authentic material anywhere and anytime.	0.580	0.514	VALID
A mobile device allows me to access materials faster.	0.619	0.514	VALID
Interacting with peers is easier with a mobile device.	0.543	0.514	VALID
A mobile device can save time in learning a language.	0.627	0.514	VALID

Table 2. The Reliability Table of the Result of Students' Attitudes

Reliability Statistics

Cronbach's Alpha	N of Items
0.847	10

Table 1 showed that the questionnaire regarding attitude had an invalid statement with r value 0.456, thus the writer dropped that statement. Consequently, the questionnaire that would be distributed contained 9 statements regarding attitude. Furthermore, the Cronbach's Alpha value for this data is 0.847. The reliability of the questionnaire regarding attitude is considered good.

Table 3. The Validity Table of the Result of Students' Self-efficacy

Statements	Rvalue	Rtable	Interpretation
I can use a mobile device to download English lessons from internet.	0.704	0.514	VALID
I can access language learning websites using a mobile device easily.	0.797	0.514	VALID
I can find more resources to access authentic language material faster using a mobile device.	0.715	0.514	VALID
I can read language articles using a mobile device effectively.	0.763	0.514	VALID

I can download and install mobile applications for language learning.	0.685	0.514	VALID
I can submit my assignments in a timely manner using a mobile device.	0.466	0.514	INVALID
I can complete my language assignments faster using a mobile device.	0.357	0.514	INVALID
I can execute internet-based language learning assignment well.	0.553	0.514	VALID
I can use Ms. Office applications for language learning.	0.421	0.514	INVALID
I can operate a mobile device for language learning without hesitation.	0.446	0.514	INVALID

Table 4. The Reliability Table of the Result of Students' Self-efficacy

Reliability Statistics

Cronbach's Alpha	N of Items
0.769	10

The questionnaire regarding self-efficacy contained 4 invalid statements (see Table 3). The invalid statements would be dropped from the questionnaire, hence there would be only 6 statements

regarding self-efficacy. Furthermore, the questionnaire regarding self-efficacy is considered acceptable since the Cronbach's Alpha value is 0.769.

After finding out the validity and reliability of the questionnaire, the writer distributed the questionnaire to the respondents who were sophomores, junior, and senior of Faculty of Language and Arts. Then, the writer inputted the quantitative data by using SPSS 20.

Data Analysis

The writer analyzed the data using SPSS 20. The writer used descriptive statistic to find out the mean scores. They helped the writer defined whether or not the result is positive or negative. To find out the correlation between the level of technology comfort and self-efficacy the writer used inferential statistics. The table below shows the meaning of the correlation coefficient (Budi, 2006):

Table 5. The Interpretation of Correlation Coefficient

Value of r	Interpretation
0.001 – 0.200	Very Weak
0.201 – 0.400	Weak
0.401 – 0.600	Moderate
0.601 – 0.800	Strong
0.801 – 1.000	Very Strong

Findings and Discussion

In this chapter, the writer analyzed the collected data. The analysis started with the demographic information of the students. The demographic information contains the information about students' gender and their technology comfort level. After that, the writer continued to discuss students' attitudes towards the use of mobile device for m-learning to answer the first research question. The writer not only defined whether the students' expressed positive

or negative attitudes but also discussed how mobile device assisted students in learning English as a foreign language. The further analysis discussed students' self-efficacy towards the use of mobile device for m-learning. The writer discussed students' self-efficacy level along with their capability to perform m-learning. In the last part of this chapter, the writer discussed the correlation between students' self-efficacy and their level of technology comfort.

Demographic Information

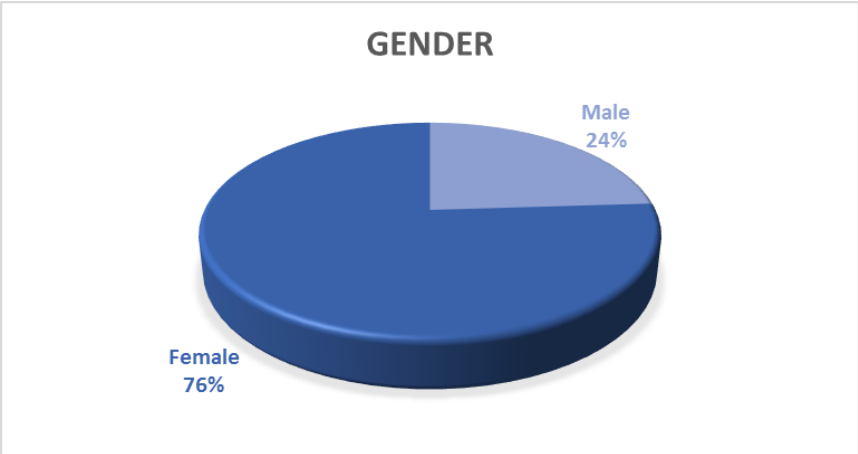

Figure 1. The Participants' Gender Information.

The writer succeeded in collecting data of 100 students out of a possible 150 students after distributing the questionnaire. Specifically, there were 24 male and 76 female students (24% and 76% of the students) who participated in this study by filling out the questionnaire.

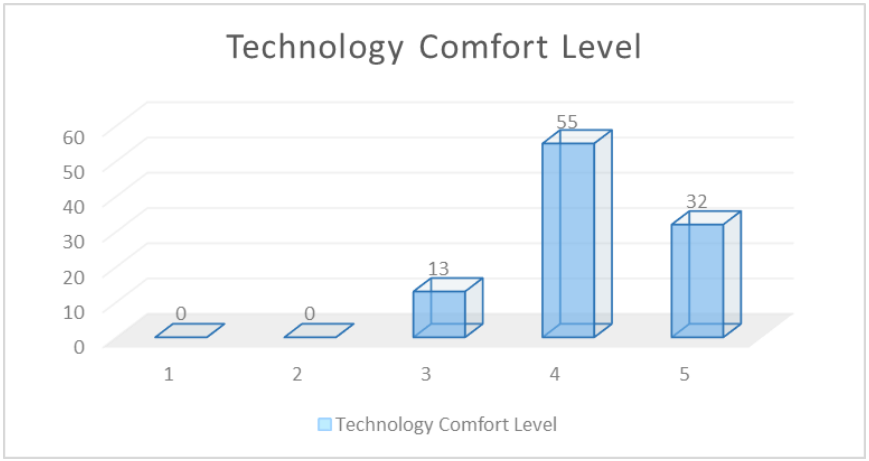

Figure 2. The Participants' Technology Comfort Level.

The chart showed students' comfort level in using technology. The scale started from 1 to 5 (very uncomfortable to very comfortable). The result implied that the overall students had a high level of technology comfort since there was no student who rated the item 1 or 2. Only 13 (13%) out of 100 students who perceived somewhat comfortable towards technology. The other 55 students (55%) felt comfortable and the remaining 32 students (32%) felt very comfortable with the use of technology.

Students' Attitudes towards the Use of Mobile Device for M-learning

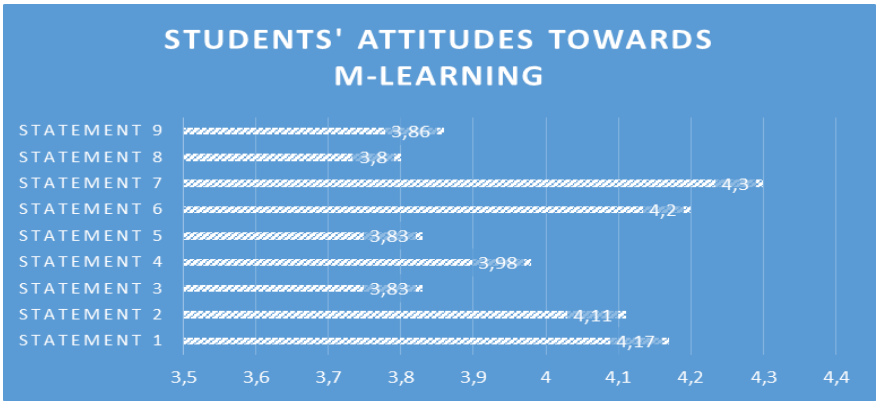

Figure 3. Students' Attitudes towards M-learning

Figure 3 presented the mean score of every statement in the attitude questionnaire. The mean score for overall statements is 4.01; therefore, it can be concluded that students expressed positive attitudes towards the use of mobile device for language learning. The following is the discussion of data analysis related to students' attitudes. The writer discussed three statements with the highest mean scores and three statements with the lowest mean scores.

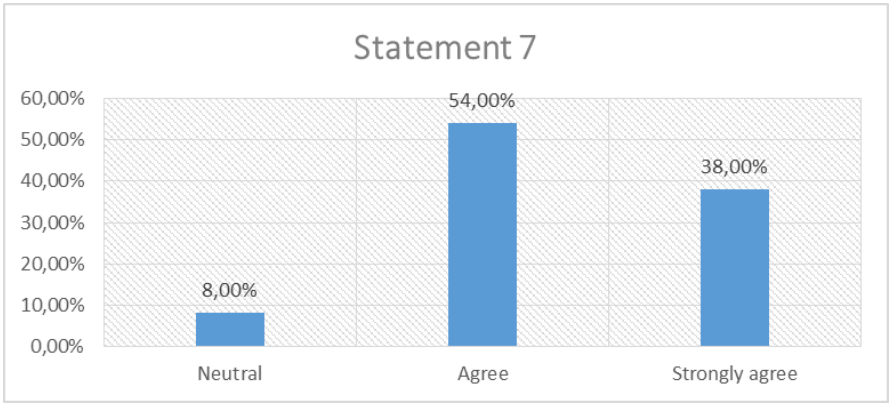

Figure 4. A mobile device allows me to access materials faster.

Statement 7 has the highest mean score of all statements regarding attitude. This statement represented the advantage of using a mobile device to access any information. The result indicated that most of the students considered mobile device connectivity helped their learning processes by allowing them to access learning materials faster. Gikas & Grant (2013) found a similar result, wherein the students in their study declared that mobile device connected them with the subject matter in a split second.

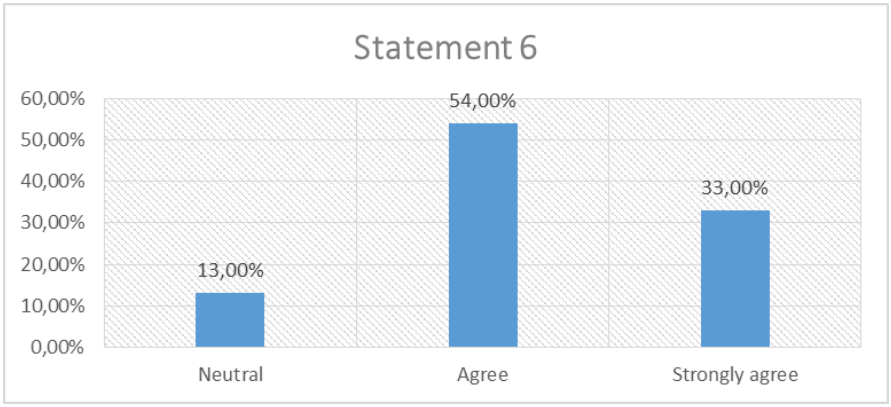

Figure 5. A mobile device allows me to access authentic materials anywhere and anytime.

Figure 5 showed that the students favored not only the mobile device capability to access information in a quick time but also the authentic material which it offered. Eighty-seven (54% agreed and 33% strongly agreed) or more than a half of the students in this study agreed that mobile device could fulfill their needs of obtaining authentic material whenever and wherever they wanted to.

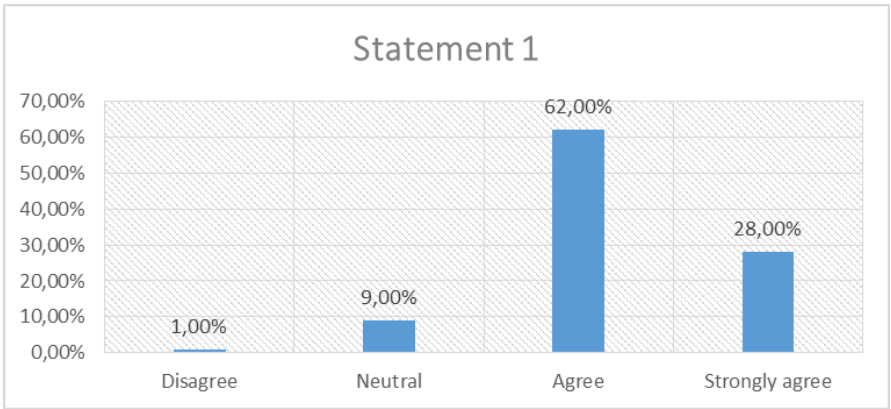

Figure 6. A mobile device can help me attain more ideas in learning a language.

Mobile device connected students to plenty language learning resources that could bring better ideas. This is shown in Figure 6. The

result showed that even though there was a student who disagreed, the other 90% of the students stated that mobile device was helpful to attain ideas for language learning purposes.

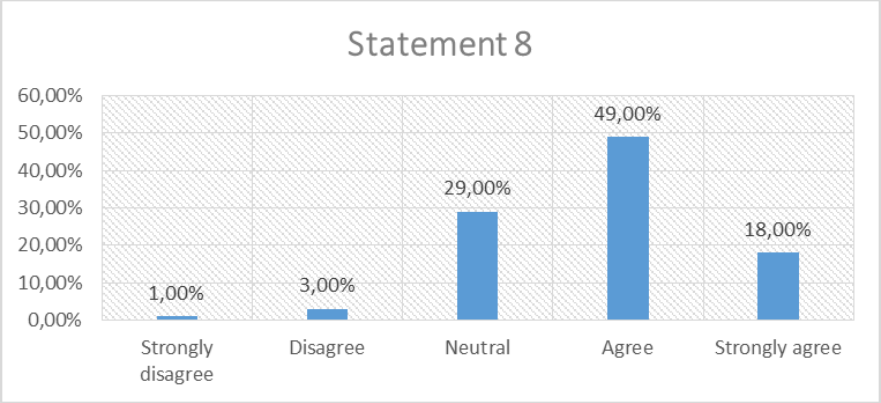

Figure 7. Interacting with peers is easier with a mobile device.

Statement 8 has the lowest mean score compared to the other statements. It discussed mobile device as a means of communication. There were 4 students (1% strongly disagreed and 3% disagreed) who disagreed that mobile device made communication with their classmates easier. Nevertheless, 67 students (49% agreed and 18% strongly agreed) agreed that communication with other learners using mobile device was easier since it allowed them to create collaborative learning. Students in Rossing, Miller, Cecil, & Stamper (2011) also showed their enthusiasm towards collaborative learning using a mobile device. They stated that mobile device allowed them to do a group work in a separate place yet simultaneously.

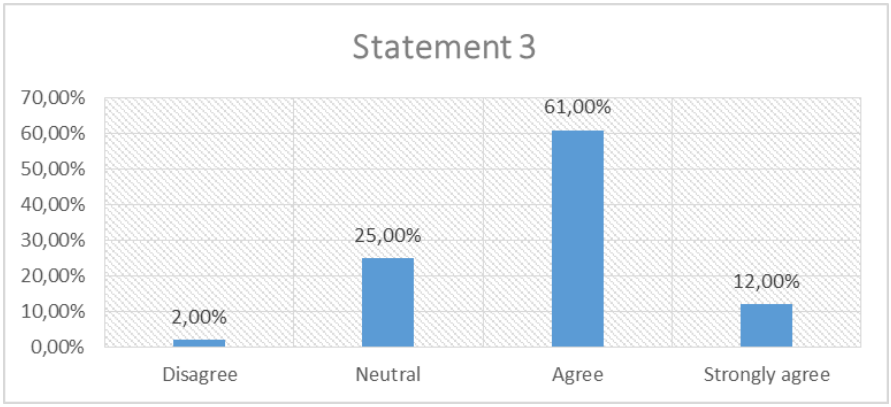

Figure 8. A mobile device can enhance my motivation to learn a language.

The advantages of using a mobile device for language learning did not affect 2 students. These students stated that mobile devices could not enhance their motivation to learn a language (see Figure 8). However, mobile device succeeded in encouraging other 73 students (61% agreed and 12% strongly agreed) to stay motivated in learning language. A mobile device is capable of enhancing not only college students' learning motivation but also elementary students. An elementary teacher in Ciampa (2014) reported that her students became more motivated to finish challenging assignments using a mobile device.

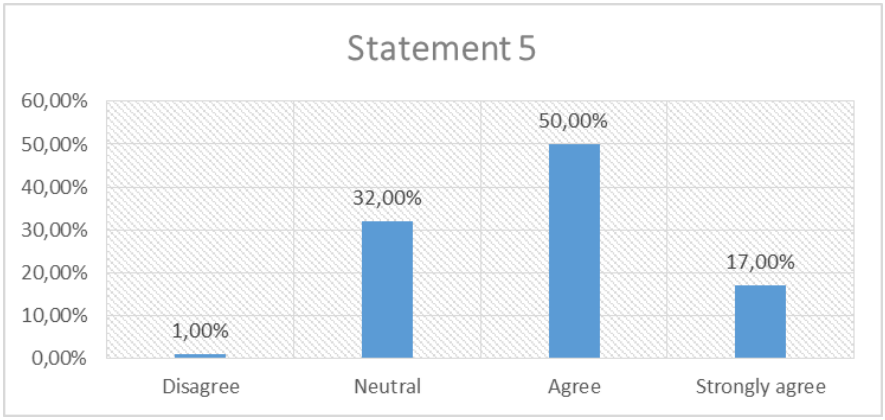

Figure 9. A mobile device makes me an independent language learner.

Figure 9 indicated that mobile device could not be a perfect companion for a student in this study to be an independent language learner. On the contrary, the other 67 students (50% agreed and 17% strongly agreed) expressed a positive reaction to the fact that the mobile device gave a chance to them to do independent learning without a guide or a teacher.

Students' Self-efficacy towards the Use of Mobile Device for M-learning

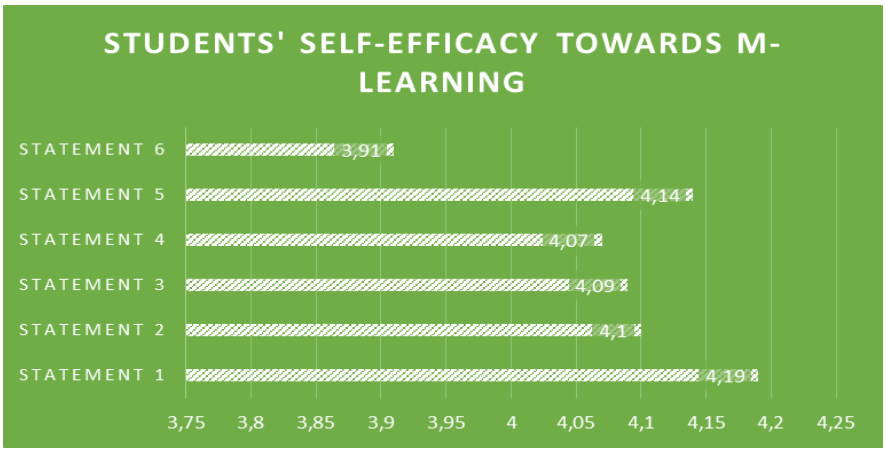

Figure 10. Students' Self-efficacy towards M-learning

The next discussion in this chapter is about students' self-efficacy. The mean score for overall statement regarding self-efficacy is 4.08. The result is the same case as in students' attitude, wherein the mean score for overall statement is more than 2.5; hence, it can be concluded that students had a high level of self-efficacy towards the use of mobile device for m-learning. The writer would like to break down all the statements to give more details on how students utilizing their mobile devices for learning language. The writer started the discussion from the highest mean score to the lowest mean score.

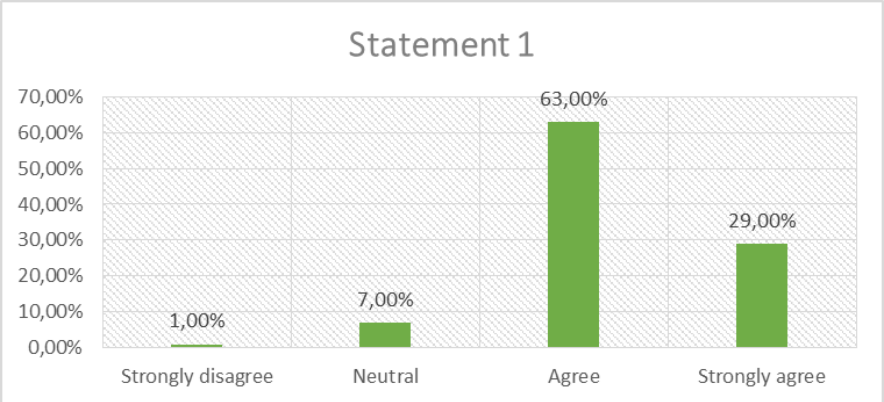

Figure 11. I can use a mobile device to download English lessons from internet.

Statement 1 received the highest mean score among the other statements regarding self-efficacy. There was only one student who faced an obstacle to download online English lesson. In addition, it could be implied from Figure 11 that 92 students in this study (63% agreed and 29% strongly agreed) were capable of downloading English lesson from the internet without facing any significant problem. The result is similar to Yang (2012), in that students in his study stated that they could download learning material on the internet using their mobile devices without facing any trouble.

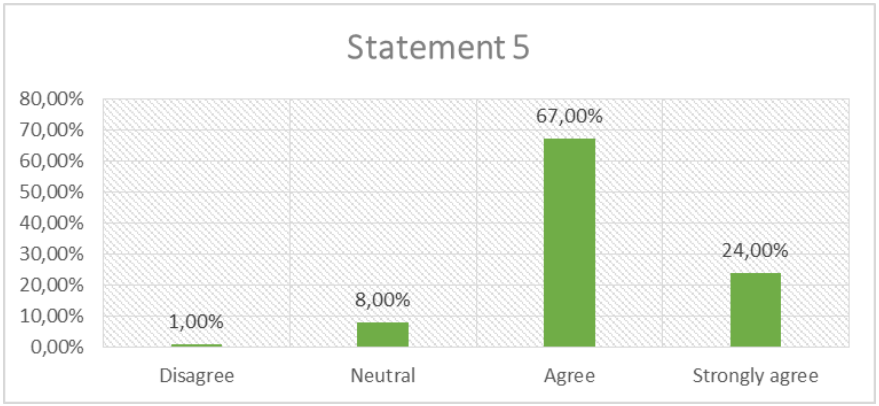

Figure 12. I can download and install mobile applications for language learning.

The students' capabilities to download any kind of data for language learning purposes also reflected in Figure 12. There were 91 students (67% agreed and 24% strongly agreed) who were able to download and install applications for language learning from their mobile devices. Only 1 out of 100 students faced a difficulty in getting access to mobile application for language learning.

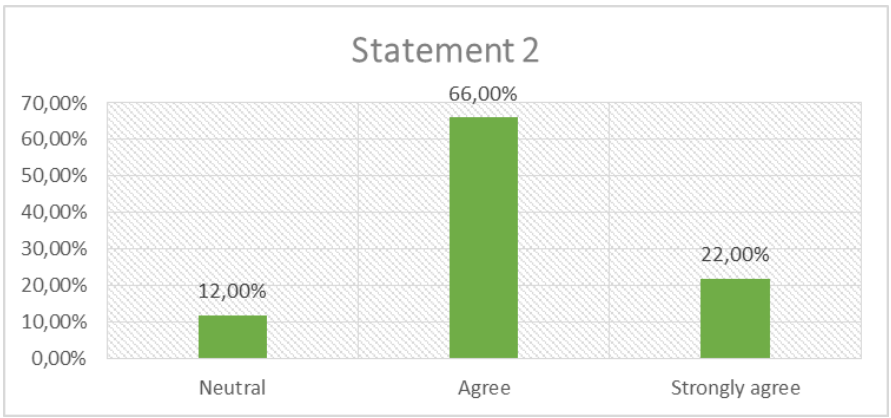

Figure 13. I can access language learning websites using a mobile device easily.

Eighty-eight students (66% agreed and 22% disagreed) demonstrated that they could surf the internet and find many language learning websites without any problem. None of the student disagreed, presumably, since they did not need to download or install to access the websites. It could be implied that most students in this study could get the access to language learning websites easily.

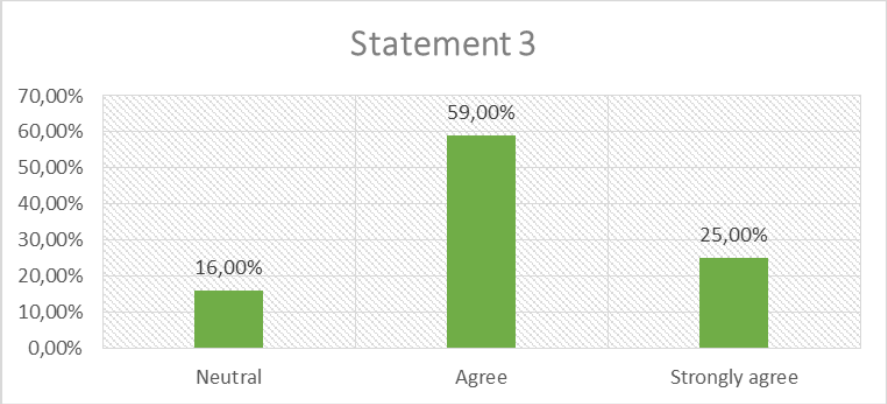

Figure 14. I can find more resources to access authentic language materials faster using a mobile device.

The result in Figure 14 showed that 84 students (59% agreed and 25% strongly agreed) were capable to find a great number of resources to access authentic language material in a quick time using their mobile devices. None of the student disagreed or strongly disagreed with Statement 3. It can be concluded that almost all of the students knew how to access authentic language material using their mobile devices.

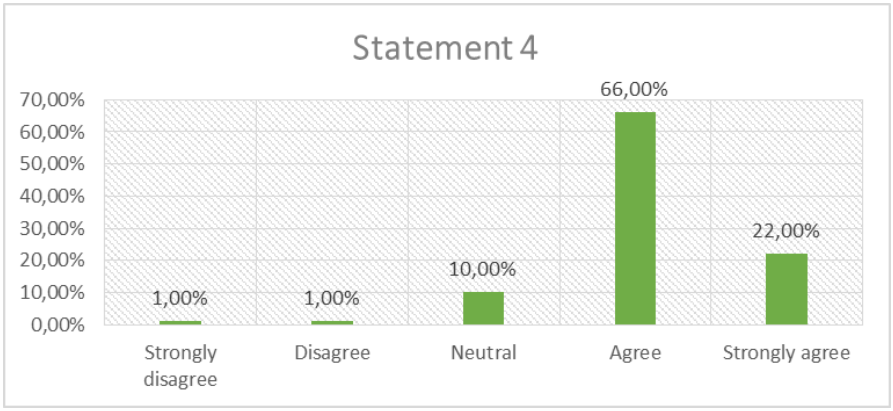

Figure 15. I can read language articles using a mobile device effectively.

Eighty-eight students (66% agreed and 22% strongly agreed) revealed that they were capable to optimize their performance in reading language article using their mobile devices. Unfortunately, there were 2 students (1% strongly disagreed and 1% disagreed) who still had difficulties in using a mobile device to read language articles effectively.

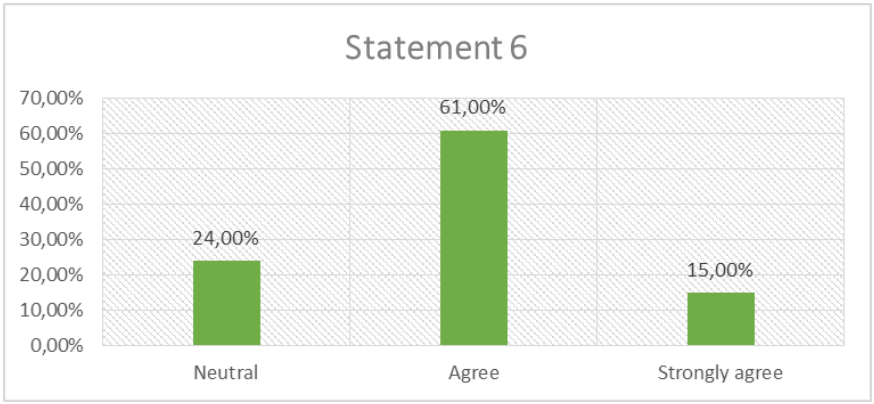

Figure 16. I can execute internet-based language learning assignment well.

The lowest mean score in the questionnaire regarding self-efficacy is 3.91. Statement 6 obtained the lowest mean score, yet the result of students' self-efficacy remained high. It became clearer that

students had a high level of self-efficacy since there were more than a half of the students (67 students) who could implement language assignment which delivered on the internet well.

The Correlation between Self-efficacy and Technology Comfort Level

In this study, the writer would also like to know the correlation between self-efficacy and the level of technology comfort. Below is the result of the data analysis using Pearson's Product Moment.

Table 6. Correlation Coefficient

		Technology Comfort Level	Self-efficacy (TOTAL)
Technology Comfort Level	Pearson Correlation	1	.392**
	Sig. (2-tailed)		.000
	N	100	100
Self-efficacy (TOTAL)	Pearson Correlation	.392**	1
	Sig. (2-tailed)	.000	
	N	100	100

The correlation between self-efficacy and technology comfort level in this study was weak, yet positive. There was a possible explanation for this result. The explanation could be owing to the mobile technology primary function. The primary function of mobile technology is as a means of communication and entertainment (Kim, Rueckert, Kim, & Seo, 2013). Today students mostly used their mobile devices for communication and entertainment purposes rather than learning purposes. For example, the students in Jambulingam & Sorooshian (2013) viewed the mobile device as a communication and entertainment tool and not as a learning tool. Consequently, students may be capable of accessing any kind of communication or entertainment resources easily, but not for learning resources since they may need to be trained first to utilize their mobile devices for learning purposes. Training is capable of lessening anxiety and boosting self-efficacy in operating technology (Bates & Khasawneh,

2004), wherein psychological arousal such as anxiety is one of self-efficacy determinants (Bandura, 1997). Thus, even though students may have a high level of technology comfort, it did not make them had high level of self-efficacy towards the use of mobile device for m-learning.

Conclusion and Suggestions

Conclusion

This study confirmed that mobile device could be an influential tool for academic life regardless of its primary function as a means of communication and entertainment. The finding on students' attitudes towards the use of mobile device for m-learning showed that the students showed their excitement using a mobile device in learning language environment. The students loved the fact that mobile device could save their time in learning since it connected them to learning sources faster. They also expressed positive reactions towards the possibility of doing independent and collaborative learning using their mobile devices. The mobile device also enhanced students learning motivation, allowed them to learn without time or place restriction, and provided rich learning facilities for the students.

Another finding reported that the students had a great level of self-efficacy by being able to optimize their mobile device performance for language learning. The students were capable to download and install mobile application for learning language. They also confidently could surf the internet and access language learning websites. Moreover, they were capable to execute an assignment delivered on the internet well. It can be concluded that almost all the students were capable to utilize their mobile devices for learning purposes.

Suggestions

A mobile device such as a smartphone may be a helpful tool for learning. Nevertheless, the students should be smarter than the device itself. They should be aware that they could not simply take

any unreliable information from their mobile devices. The students should be able to filter the information since everyone who is connected to the internet could not only access but also upload information. Thus, intentionally or not, sometimes people shared invalid information. That invalid information may lead to false comprehension. The students would be better using those considerations to check the information validity from an expert such as their lecturer. For future research in the same topic, it is suggested that the researcher broaden the scope into other universities since this study conducted only in one university. The researcher may use not only quantitative method, but also mixed method to collect and analyze the data to go deeper into the discussion. For the instrument, the future research should use a questionnaire which consists of the 4 determinants of self-efficacy (mastery experiences, vicarious experiences, social persuasion, and psychological arousal) (Bandura, 1997). In addition, mobile device should be defined more clearly. Therefore, respondents will have a better understanding whether mobile learning refers to smartphone, laptop, tablet, or other mobile devices.

References

Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016). Investigating Attitudes Towards The Use of Mobile Learning in Higher Education. *Computers in Human Behavior*, 93-102.

Bandura, A. (1982). Self-Efficacy Mechanism in Human Agency. *American Psychologist*, 122-147.

Bandura, A. (1993). Perceived Self-Efficacy in Cognitive Development and Functioning. *Educational Psychologist*, 117-148.

Bandura, A. (1997). *Self-efficacy: The Exercise of Control.* New York: W. H. Freeman and Company.

Bandura, A. (2006). Guide for Constructing Self-Efficacy Scales. In A. Bandura, *Self-Efficacy Beliefs of Adolescents* (pp. 307-337).

Bates, R., & Khasawneh, S. (2004). A Path Analytic Study of the Determinants of College Students' Motivation to Use Online Learning Technologies . *Online Submission*, 1075-1082.

Bertram, D. (2007). *Likert Scales.*

Bishop, M. (2010). *Virtual Teacher Talk: Blogging With and By Pre-Service Teachers.* Dissertation Publishing.

Budi, T. P. (2006). *SPSS 13.0 Terapan: Riset Statistik Parametrik.* Yogyakarta: ANDI.

Chang, C.-C., Yan, C.-F., & Tseng, J.-S. (2012). Perceived Convenience in An Extended Technology Acceptance Model: Mobile Technology and English Learning for College Students. *Australasian Journal of Educational Technology*, 809-826.

Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An Investigation of Mobile Learning Readiness in Higher Education Based on The Theory of Planned Behavior. *Computers & Education*, 1054-1064.

Ciampa, K. (2014). Learning in a Mobile Age: An Investigation of Student Motivation. *Journal of Computer Assisted Learning*, 82-96.

Cochrane, T., & Bateman, R. (2010). Smartphones Give You Wings: Pedagogical Affordances of Mobile Web 2.0. *Australasian Journal of Educational Technology*, 1-14.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education.* New York: Routledge.

Cubukcu, F. (2008). A Study on The Correlation Between Self Efficacy and Foreign Language Learning Anxiety. *Journal of Theory and Practice in Education*, 148-158.

Curry, L. A., Nembhard, I. M., & Bradley, E. H. (2009). Qualitative and Mixed Methods Provide Unique Contributions to Outcomes Research. *Key Issues in Outcomes Research*, 1442-1452.

Dinther, M. v., Dochy, F., & Segers, M. (2011). Factors Affecting Students' Self-Efficacy in Higher Education. *Educational Research Review*, 95-108.

Franklin, T. (2011). Mobile Learning: At The Tipping Point. *TOJET: The Turkish Online Journal of Educational Technology*, 261-275.

Gikas, J., & Grant, M. M. (2013). Mobile Computing Devices in Higher Education: Student Perspective on Learning with Cellphones, Smartphones & Social Media. *Internet and Higher Education*, 18-26.

Hine, N., Rentoul, R., & Specht, M. (2004). Collaboration and Roles in Remote Field Trips. In J. Attewell, & C. Savill-Smith, *Learning with Mobile Devices Research and Development* (pp. 69-72). London: Learning and Skills Development Agency.

Hsieh, P. P.-H., & Kang, H.-S. (2010). Attribution and Self-Efficacy and Their Interrelationship in The Korean EFL Context. *A Journal of Research in Language Studies*, 606-627.

Jambulingam, M., & Sorooshian, S. (2013). Usage of Mobile Features among Undergraduates and Mobile Learning. *Current Research Journal of Social Sciences* , 130-133.

Kim, D., Rueckert, D., Kim, D.-J., & Seo, D. (2013). Students' Perceptions and Experiences of Mobile Learning. *Language Learning & Technology*, 52-73.

Krosnick, J. A., & Presser, S. (2018). Questionnaire Design. In *The Palgrave Handbook of Survey Research* (pp. 439-455). Palgrave Macmillan.

Levy, M. (2009). Technologies in Use for Second Language Learning. *The Modern Language Journal*, 769-782.

Martin, F., & Ertzberger, J. (2013). Here and Now Mobile Learning: An Experimental Study on The Use of Mobile Technology. *Computers & Education*, 76-85.

Matherly, M., Watson, M. W., & Ivancevich, S. (2009). Implementing Generalized Audit Software in the Classroom. *AIS Educator Journal*, 27-54.

Matveev, A. V. (2002). The Advantages of Employing Quantitative and Qualitative Methods in Intercultural Research: Practical Implications from the Study of the Perceptions of Intercaltural Communication Competence by American and Russian

Managers. *Collected research articles, Bulletin of Russian Communication Association "Theory of Communication and Applied Communication"*, 59-67.

McAuley, E., & Blissmer, B. (2000). Self-Efficacy Determinants and Consequences of Physical Activity. *Exercise and Sport Sciences Reviews*, 85-88.

McInerney, V., McInerney, D. M., & Sinclair, K. E. (1994). Student Teachers, Computer Anxiety and Computer Experience. *Journal of Educational Computing Research*, 27-50.

Niño, A. (2015). Language Learners Perceptions and Experiences on the Use of Mobile Applications for Independent Language Learning in Higher Education. *The IAFOR Journal of Education* , 73-84.

Oz, H. (2015). An Investigation of Preservice English Teachers' Perceptions of Mobile Assisted Language Learning. *English Language Teaching*, 22-34.

Peng, H., Tsai, C.-C., & Wu, Y.-T. (2006). University Students' Self-Efficacy and Their Attitudes Toward The Internet: The Role of Students' Perceptions of The Internet. *Educational Studies*, 73-86.

Quinn, C. (2000). MLearning: Mobile, Wireless, in-your-pocket Learning. *LiNE Zine*.

Rossing, J. P., Miller, W. M., Cecil, A. K., & Stamper, S. E. (2011). iLearning: The Future of Higher Education? Student Perceptions on Learning with Mobile Tablets . *Journal of the Scholarship of Teaching and Learning* , 2-27.

Saade, R. G., & Kira, D. (2009). Computer Anxiety in E-Learning: The Effect of Computer Self-Efficacy . *Journal of Information Technology Education*, 177-191.

Stolte, S. K., Richard, C., Rahman, A., & Kidd, R. S. (2011). Student Pharmacists' Use and Perceived Impact of Educational Technologies. *American Journal of Pharmaceutical Education* , 1-6.

Suratno, A., Murniati, C. T., & Aydawati, E. N. (2016). Students' Perceptual Beliefs about the Information Technology for Language Learning. 919-922.

Teijlingen, E. R., & Hundley, V. (2001). The Importance of Pilot Studies. *Social Research Update*.

Tsai, M.-J., & Tsai, C.-C. (2003). Information Searching Strategies in Web-Based Science Learning: The Role of Internet Self-Efficacy. *Innovations in Education and Teaching International*, 43-50.

Vazquez-Cano, E. (2014). Mobile Distance Learning with Smartphones and Apps in Higher Education. *Educational Sciences: Theory & Practice*, 1505-1520.

Wang, S., & Smith, S. (2013). Reading and Grammar Learning Through Mobile Phones . *Language Learning & Technology*, 117-134.

Yang, S.-h. (2012). Exploring College Students' Attitudes and Self-efficacy of Mobile Learning. *TOJET: The Turkish Online Journal of Educational Technology*, 148-154.

Youssef, M., & Agrawala, A. (2004). Handling Samples Correlation in the Horus System. *Twenty-third AnnualJoint Conference of the IEEE Computer and Communications Societies*, 1023-1031.

Zimmerman, B. J. (2000). Self-Efficacy: An Essential Motive to Learn. *Contemporary Educational Psychology* , 82-91.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-Motivation for Academic Attainment: The Role of Self-Efficacy Beliefs and Personal Goal Setting. *American Educational Research Journal*, 663-676.

Ten articles on technology and language research and best practices are compiled in this book to inform readers the current research and best practices on technology-enhanced language teaching and learning. The first part will discuss how social media is used to enhance the teaching and learning process. The second part focuses on Mobile Learning, particularly, how students perceive mobile learning and how smartphones can benefit students. The articles in the third part discuss the possibilities of using Google applications in language classrooms. The last part of the book contains articles on the evaluation of e-learning.

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